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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,377	02/01/2007	Juichi Kubo	062284	9876
38834 7590 11/07/2008 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				
EXAMINER MCNALLY, DANIEL				
ART UNIT		PAPER NUMBER		
1791				
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11/07/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/572,377

**Applicant(s)**

KUBO ET AL.

**Examiner**

DANIEL MCNALLY

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/02)  
Paper No(s)/Mail Date 3/16/2006, 4/6/2006, 9/25/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Verville [US5186781, herein "Verville"].

Verville discloses a method and apparatus for applying an optical fiber to a substrate. The method comprises, as shown in Figure 1, feeding an optical fiber (12) through an adhesive ejecting nozzle (28), wherein the inner diameter of the aperture (44) is larger than the outer diameter of the optical fiber (column 4, lines 56-66), obtaining a fiber coated with an adhesive and forming a optical wiring on a substrate (14) by simultaneously ejecting the optical fiber and the adhesive.

With regard to claim 4, there is relative movement between the substrate and the nozzle because the substrate is rotated while the nozzle is fixed.

With regard to claim 7, the apparatus comprises a liquid material ejecting unit (28), with a nozzle (44) having an inner diameter larger than an outer diameter of the optical fiber, and a stage (lathe 18) for supporting a substrate (14), wherein in the lathe and the nozzle are movable relative to each other because the lathe is rotatable.

With regard to claim 9, the nozzle is fixed and the stage for supporting the substrate rotates.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 6, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama et al. [US6778754, herein "Hirayama"] in view of Verville.

Hirayama discloses a method and apparatus for optical fiber wiring. The method comprises feeding an optical fiber onto a substrate (column 3, lines 36-67). The substrate is coated with an adhesive layer to which the optical fiber is applied, however Hirayama is silent as to passing the optical fiber through a nozzle, with an inner diameter larger than the outer diameter of the optical fiber, and simultaneously ejecting the optical fiber with an adhesive coating thereon from the nozzle.

Verville discloses a method and apparatus for applying an optical fiber to a substrate. Applicant is referred to paragraph 3 for a detailed discussion of Verville. Verville discloses it was known to apply the optical fiber to a preapplied layer of adhesive (column 1, lines 61-68). Verville teaches continuously coating adhesive onto an optical fiber as the optical fiber passes through the adhesive applicator, which allows for the application of a controllable and uniform coating of adhesive. Verville teaches the improved adhesive application method eliminates uneven adhesive application and speeds up the process by continuously applying the optical fiber to the substrate (column 2, lines 11-67).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hirayama by using an adhesive application process that involves passing the optical fiber through an adhesive applicator as taught by Verville in order to provide better control over the amount of adhesive used and applied.

With regard to claim 3, Hirayama discloses relative movement between the substrate and the optical fiber dispenser with the substrate being held fixed and moving the optical fiber dispenser (column 5, lines 17-27).

With regard to claim 6, Verville discloses the adhesive can be a UV curable adhesive (column 5, lines 53-55), and it is inherent UV energy would be irradiated onto the adhesive to cure the UV curable adhesive.

With regard to claim 7, Hirayama and Verville disclose the apparatus comprises a liquid material ejecting unit (28), with a nozzle (44) having an inner diameter larger than an outer diameter of the optical fiber, and a stage (Figure 7 of Hirayama) for

supporting a substrate, wherein in the stage and the optical fiber dispenser are movable relative to each other.

With regard to claim 8, Hirayama discloses relative movement between the substrate and the nozzle with the substrate being held fixed and moving the nozzle (column 5, lines 17-27).

6. Claims 2, 6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama and Verville and further in view of Keyworth et al. [US5534101, herein "Keyworth"].

Hirayama as modified discloses a method and apparatus for optical fiber wiring. Applicant is referred to paragraph 5 for a detailed discussion of Hirayama as modified. Hirayama discloses controlling the speed of applying the optical fiber (column 5, lines 9-27). Verville is silent as to controlling the air pressure for pushing out the adhesive.

Keyworth discloses a method and apparatus for forming a waveguide on a substrate. The method comprises feeding a UV curable liquid from a nozzle onto a substrate, relatively moving the nozzle and the substrate and curing the UV curable liquid (column 4, lines 1-21). Keyworth discloses controlling the amount of air pressure applied in the nozzle to control the amount of UV curable liquid being dispensed.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hirayama by controlling the air pressure applied to the nozzle as taught by Keyworth in order to control the amount of adhesive material dispensed from the nozzle.

With regard to claim 6, Verville discloses the adhesive could be a UV curable resin but does not explicitly disclose curing the UV curable resin. Keyworth teaches using UV curable resin, and curing the resin using UV energy irradiated from a UV source. One of ordinary skill in the art would have readily appreciated curing the UV curable resin using UV energy irradiated from a UV source as taught by Keyworth in order to ensure a complete cure of the resin material.

With regard to claim 10, Keyworth discloses using a UV source or UV irradiation unit.

With regard to claim 11, as discussed above the apparatus is capable of controlling the application of the optical fiber and the air pressure in the nozzle.

7. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama and Verville and further in view of Swiggett et al. [US4693778, herein "Swiggett"].

Hirayama as modified discloses a method and apparatus for optical fiber wiring. Applicant is referred to paragraph 5 for a detailed discussion of Hirayama as modified. Hirayama discloses relative movement by fixing the substrate and moving the nozzle, but is silent as to fixing the nozzle and moving the substrate.

Swiggett discloses a method and apparatus for applying conductors to a substrate. Swiggett discloses relative movement between a dispenser and a substrate and be caused by either fixing the substrate and moving the dispenser, or fixing the dispenser and moving the substrate (column 3, lines 5-16). Swiggett teaches either method is a well known alternative for creating relative motion.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hirayama by fixing the nozzle and moving the substrate as taught by Swiggett, as a substitution of well known alternatives is within the purview of one of ordinary skill.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama and Verville and further in view of Hawkins [US3742107, herein "Hawkins"].

Hirayama as modified discloses a method and apparatus for optical fiber wiring. Applicant is referred to paragraph 5 for a detailed discussion of Hirayama as modified. Hirayama disclose an optical fiber but is silent as to a polymer optical fiber.

Hawkins discloses a method of making an optical fiber. Hawkins discloses glass fibers are well known, however polymeric optic fibers can be used and have the added benefit of increased strength and flexibility (column 1, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Hirayama by using a polymeric optical fiber as taught by Hawkins in order to increase the strength and flexibility of the optical fiber.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone



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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/  
Examiner, Art Unit 1791

/John L. Goff/  
Primary Examiner, Art Unit 1791

/DPM/  
November 4, 2008